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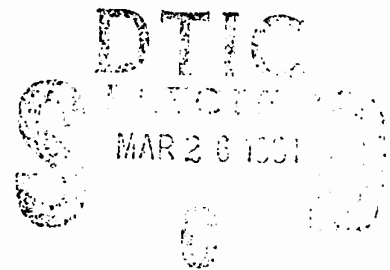
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FEEDING CONCEPT, MILITARY VS CIVILIAN SYSTEM

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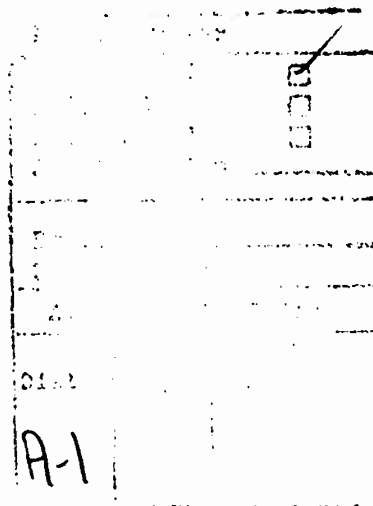
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PREFACE

Not since 1974 has Navy feeding been compared with civilian feeding in a systematic way. The purpose of this study was to update this older work to determine current comparability between the military and civilian worlds and to determine where the Navy most needed to make improvements in its foodservice system.

ACKNOWLEDGEMENTS

The authors wish to acknowledge the sacrifice of time and effort made by both the Navy and civilian foodservice managers to support our data collection efforts. The authors also wish to acknowledge the sailors and civilians who cooperated in filling out questionnaires.

INTRODUCTION

A major concern in military recruitment and retention is the comparability of the total package of pay and allowances within the military to that in the civilian world. If troops and sailors feel relatively deprived compared to their civilian counterparts, they are more likely to leave the service prior to retirement. It is expensive to recruit and train novices to replace experienced servicemen. Money saved by limiting pay and benefits, therefore, may be more than offset by increased recruiting and training costs associated with the increased turnover among personnel. Therefore, it is important for the military services and the U. S. Congress to keep abreast in matters of pay and benefit comparability between military and civilians.

One component of this comparability concerns military food and foodservice. Not since 1974 has a study been done to compare military feeding with civilian feeding to determine what the Navy might learn from its civilian counterparts to improve Naval foodservice systems. The 1974 study¹ examined civilian trends at a university, a football team, police academy, merchant marine ship, and an oil drilling rig, institutions all considered analogous in some ways to various military units and training centers. The results indicated that the level of feeding quality was somewhat higher among these civilian sites than in the Navy, in terms of quantity and quality as well as cost. Such a finding had clear implications for the need to raise the Basic Daily Food

Allowance (BDFA). However, although these other organizations used for comparison are more comparable to the military than some other civilian groups, they certainly can't be considered identical.

The current study updated these 16-year old findings to determine where the Navy now stood in comparison to its civilian counterparts. This is important as part of the continuing need to know whether military pay and allowances are equitable with the civilian world. Furthermore, it may point to the kind of adjustments the Navy may need to make to further improve its overall foodservice system.

For example, the Navy Food Cost Index (FCI) is based on the daily per person cost for 55 commonly utilized food items. During the 5-year period from 1982-1986, the FCI fluctuated slightly up and down in the range between \$3.40 and \$3.70, but basically remained unchanged. Yet, during the same 5-year period the consumer price index (CPI) for food registered a cumulative increase of 15.4%. Food cost, of course, is only one important criterion to be considered in an examination of foodservice comparability. The purpose of this study was to select civilian sites roughly analogous to Navy sites and to compare their respective foodservices in terms not only of the amount of money spent on food, but also in terms of consumer satisfaction with the food and foodservice environment, menu variety, and basic nutritional adequacy.

METHOD

Site Selection

Navy personnel both ashore and afloat were surveyed. Two enlisted dining facilities (EDF) at Norfolk, Virginia were studied: the Naval Air Station (NAS) and the Naval Operations Base (NOB). The Navy Training Station EDF at San Diego, California was also studied. Sailors eating in the ships' mess while at sea were also surveyed onboard the USS Buchanan (a destroyer, DDG-14) and the USS Fox (a guided missile cruiser, CG-33). Researchers from US Army Natick Research, Development & Engineering Center surveyed the sailors ashore, while the foodservice officer onboard each ship was responsible for surveying the sailors at sea. In both cases, the same type of questionnaire was used.

The civilian sites were chosen for comparability with the Navy sites in terms of the age and gender of clientele served, as well as the geographic distribution of sites. Only sites which met the following criteria were considered: it must feed at least 100 customers per meal, serve 3 meals per weekday, serve meals 7 days a week, and have housing available at the site. Those institutions which agreed to be studied were told they would remain anonymous. Therefore, their names and locations cannot be disclosed. However, they can be characterized in a general way. Two civilian sites were sponsored by the federal government. One was a training institution sponsored by the US Department of Labor, and its dining facility served the students being trained

there. The other was a national park sponsored by the US Department of the Interior, and its dining facility served park employees. Two other civilian sites surveyed were non-government: a small men's college and a military prep school, both of which served meals to their students. Researchers from Natick administered the questionnaires at all of these civilian sites. (More information about these sites is provided in Tables 1-4, to be discussed later).

The Questionnaire

All subjects at all sites were given the same questionnaire to assess their attitudes toward institutionalized feeding. (A sample questionnaire can be found in Appendix A.) This questionnaire was divided into five major sections. The first section asked about each subject's background, such as age, gender, race, and the highest level of education achieved. The purpose of this section was to insure the civilian sample was reasonably comparable to the military one and to allow analysis of such factors as age and education which might influence attitudes toward food and foodservice environments. The second section listed 19 foods found to be common in the menus obtained in advance of the study from all sites. These foods ran the gamut from soups, entrees, vegetables and starches to dessert. Items such as chicken noodle soup, pizza, fried chicken, hamburgers, rice, green peas, and chocolate cake were included. The subjects were asked to indicate how much they liked each food

item as prepared in the dining hall being surveyed. Subjects responded by filling in one of ten circles corresponding to the following scale, where zero means "never tried," 1 means "dislike extremely," 5 refers to "neither like nor dislike," and 9 indicates "like extremely."

Section three of the questionnaire asked about the same foods as in question one--the difference was in asking how much subjects liked them as prepared in commercial cafeterias and restaurants rather than in their own dining hall. The purpose of Section three was to determine whether both the military and civilian samples had roughly equivalent opinions of the quality of food outside their own institutions. If they were roughly equivalent in evaluating outside food, then differences in evaluations of their own institutions would more likely be real rather than just a product of some inherent bias due to a difference in the composition of the samples.

The final two sections of the questionnaire also focused on the distinction between rating one's own dining hall versus commercial cafeterias and restaurants. Section 4 asked how satisfied subjects were with 16 different features of the foodservice environment in their own dining hall. These included physical conditions such as noise level, cleanliness, lighting, temperature, and air quality; service conditions such as the waiting line, dining hall staff, hours of operation, and the number of available seats; and the condition of food, including such features as the number of items per meal, nutritional

quality, portion size, taste of the food, and the appearance of the food. The final section of the questionnaire asked about the same 16 foodservice environment features, but with regard to commercial cafeterias and restaurants rather than to their own dining halls. All the questions in sections four and five were to be answered on a 7-point scale where 1 means "extremely dissatisfied," 4 indicates "neither satisfied nor dissatisfied," and 7 indicates "extremely satisfied." As before, the purpose of Section five was to determine whether both the military and civilian samples had roughly equivalent opinions of the quality of the foodservice environment outside their own institutions. If they were roughly equivalent in evaluating outside foodservices, then differences in evaluations of their own institutions were more likely to be real rather than just a product of some fundamental difference in the composition of the samples.

Procedure

The questionnaires were not administered on weekends, Mondays, or Fridays, since these were considered atypical days in terms of eating out. They were administered during the mid-week days except for those falling on a holiday, payday, or day after a payday. Questionnaires were distributed to the respondents; each filled out the form individually and returned it to the surveyor.

RESULTS

Subject Profile

The total number of military subjects with completed questionnaires was 571. The demographic characteristics on these subjects are provided separately for each site (see Table 1; note that the percents in each block do not always add to 100% due to rounding errors):

Site 1, an EDF ashore, provided 128 Navy subjects who filled out the questionnaires. About two-thirds of these were of the most junior rank, i.e., E-1 through E-4. Most of the rest were E-5 and E-6. Their average age was 24.8 years, and 86% were male. Half were high school graduates, and the other half had some college or were college graduates. About three-quarters were white, with 18% black, and the remainder were a mix of Hispanic, Asian/Pacific Islander, American Indian/Alaskan, or other minority backgrounds.

Site 2, another EDF ashore, provided 115 Navy subjects. About two-thirds were of the E-1 through E-4 ranks, with most of the rest being E-5 to E-6. Their average age was 24.1 years, and 93% were male. Five percent had completed less than a high school education, while 44% were high school graduates, and about half had some college or were college graduates. Nearly three-quarters were white, with 16% black, and the rest a mixture of other minorities.

The final ashore EDF, Site 3, provided 137 subjects. The vast majority (96%) were ranked E-1 through E-4. Their average

Table 1

Demographic Characteristics of Navy Sites

	Site 1 (128 Ss)	Site 2 (115)	Site 3 (137)	Site 4 (191)
<u>Rank:</u>				
E-1 to E-4	64%	68%	96%	63%
E-5 to E-6	35%	31%	2%	2%
E-7 to E-9	1%	2%	2%	33%
W-1 to O-4	1%	--	--	--
O-5 to O-10	--	--	--	2%
<u>Age(in years):</u>	24.8	24.1	20.6	25.2
<u>Gender:</u>				
Male	86%	93%	97%	99%
Female	14%	7%	3%	1%
<u>Education:</u>				
Grade sch grd	--	2%	2%	--
Some high sch	--	3%	2%	1%
High sch grd	50%	44%	68%	61%
Some college	40%	42%	25%	34%
College grd	10%	9%	4%	4%
<u>Race:</u>				
White	73%	72%	64%	70%
Black	18%	16%	23%	13%
Hispanic	5%	3%	5%	6%
Other	4%	9%	8%	11%

age was somewhat younger than for the previous two sites--20.6 years. The vast majority was male. Four percent were less than high school graduates, while 68% had attained high school graduation, and only about a quarter had some college or were college graduates. About two-thirds were white, with 23% black, and the remainder a mix of other minorities.

Site 4 is actually a composite of the sailors aboard two ships at sea. These figures were combined because there were so few respondents (N=22) on the smaller ship that it made little sense to retain them as a separate group. About two-thirds of the combined shipboard sample were ranked E-1 through E-4, only 2% were E-5 to E-6, and 33% were E-7 to E-9 and 2% were O-5 through O-10. Their average age was 25.2 years, and all but 1% were male. Only 1% had less than a high school diploma, while 61% were high school graduates and 38% had some college experience or a college degree. Seventy percent were white, while 13% were black, and 17% came from other minority backgrounds.

Although the exact distribution of demographic characteristics naturally varied somewhat from site to site, the majority of subjects had the following traits in common, as can be seen in the composite military profile in Table 3--they were young, white males, junior in rank, with at least a high school diploma.

The total number of civilian subjects with completed questionnaires was 404. The demographic characteristics on these

subjects are provided separately for each site (see Table 2; note that the percents in each block do not always add to 100% due to rounding errors):

In Table 2, yearly income is used as a measure of socioeconomic status rather than military rank. Civilian site A, a federal training site in the northeast, provided 107 subjects. Ninety percent of these were at the lowest level of annual income, i.e., below \$7,500. Their average age was 18.4 years, and 69% were male. Two thirds had some high school education, 24% had completed high school, and only 3% had some college education. Only 22% were white, while 56% were black, 11% were Hispanic, and 11% came from other minority backgrounds.

Civilian site B, a national park dining facility, provided 121 subjects. Three-quarters of these were from the lowest income level, while 10% made \$7,501 to \$10,000 per year, and the rest were scattered among the higher income levels. Their average age was 24.0 years, and 58% were male. Almost a quarter were high school graduates, while almost three-quarters had some college education or were college graduates. The vast majority (91%) was white, while only 4% were black, 1% Hispanic, and the remaining 4% from other minority backgrounds. Site B was the only site where subjects were salaried. (At other sites the students had to use their own initiative to get part-time jobs).

Civilian site C, an all-men's college, provided 106 subjects. Ninety-two percent of these came from the lowest income level, while the rest were about equally scattered among

higher income levels. Their average age was 19 years, and 100% of them were male. Almost all of them (93%) reported having some college education. The majority (85%) were white, while 7% were black, 2% Hispanic, and 6% from other minorities.

Civilian site D, a military prep school, provided 70 of their seniors as subjects. About three-quarters reported being from the lowest income level, while 21% reported being from the highest. The remaining 5% were scattered at the low and middle ends of the scale. Their average age was 18.6 years, and 97% were male. Eighty-four per cent of them indicated having some high school education, while 7% indicated some college training or college graduation. The majority (91%) were white, while 3% were black, 3% Hispanic, and 2% from other minorities.

On the average, then, as can be seen in Table 3, the average civilian respondent was a young, white male, from the lower socio-economic level, with a high school or college background. As Table 3 reveals, the civilian group as a whole was remarkably like the military group in these key aspects. It can be concluded that the two samples of respondents were similar enough to make meaningful comparisons of their data. There were some slight variations, however. On the average, the military group was somewhat older (23.8 vs. 20.3 years) and somewhat more likely to be male (95% vs. 79%) than the civilian group. On the other hand, the military group was somewhat less likely to have some college experience (41% vs 49%) than was the civilian group. These minor differences should be kept in mind when interpreting

Table 2

Demographic Characteristics of Civilian Sites

	Site A (107 Ss)	Site B (121)	Site C (106)	Site 4 (70)
<u>Yearly Income:</u>				
<\$7,500	90%	75%	92%	74%
7,501-10,000	2%	10%	1%	2%
10,001-15,000	1%	7%	2%	--
15,001-23,000	4%	6%	3%	3%
23,001-26,000	1%	2%	--	--
>26,000	1%	1%	2%	21%
<u>Age(in years):</u>	18.4	24.0	19.0	18.6
<u>Gender:</u>				
Male	69%	58%	100%	97%
Female	31	42	--	3%
<u>Education:</u>				
Grade sch grd	6%	--	--	1%
Some high sch	67%	3%	1%	84%
High sch grd	24%	23%	6%	7%
Some college	3%	50%	93%	1%
College grd	--	23%	--	6%
<u>Race:</u>				
White	22%	91%	85%	91%
Black	56%	4%	7%	3%
Hispanic	11%	1%	2%	3%
Other	11%	4%	6%	2%

Table 3
Comparison of Average Military and Civilian Sites

	Military (571 subjects)	Civilian (404 subjects)
<u>Rank (Salary Level¹):</u>		
E-1 to E-4 (1)	72%	84%
E-5 to E-6 (2)	15%	4%
E-7 to E-9 (3)	12%	3%
W-1 to O-4 (4)	--	4%
O-5 to O-10 (5,6)	1%	5%
<u>Age (in years):</u>	23.8 yrs	20.3 yrs
<u>Gender:</u>		
Male	95%	79%
Female	5%	21%
<u>Education (highest level completed):</u>		
Grade sch grd	1%	2%
Some high sch	1%	33%
High sch grd	57%	16%
Some college	35%	41%
College grd	6%	8%
<u>Race:</u>		
White	69%	72%
Black	17%	18%
Hispanic	5%	4%
Other	8%	7%

¹Salary codes are based on the scale where 1 refers to <\$7,500, 2 means 7501-10,000, 3 means 10,000-15,000, 4 indicates 15,001-23,000, 5 means 23,001-26,000, and 6 indicates >26,000.

Table 4
Foodservice Costs By Type of Operation

	Site A	Site B	Site C	Site D
<u>Characteristic:</u>				
Area of country	Northeast	West	Central	South
Contract FS	yes	yes	yes	no
Menu cycle	5 wks	25 days	4 wks	--
Max meals served	290	318	190	214
Daily food cost	\$1.78	\$5.50	\$4.35	\$3.30
<u>Civilian average:</u>	\$3.73			
<u>Navy standard:</u>	\$3.46			

the remainder of the data.

Average Food Cost

Another way to determine whether the Navy and civilian sites were reasonably comparable is to contrast their basic food costs. As Table 4 shows, the standard daily food cost per person for the Navy at this time was \$3.46. The civilian sites calculated their own food costs by computing an annual total and dividing by the product of the number of days served and the number of diners fed. The four sites varied among themselves a good deal, but their average daily food cost per person was \$3.73. Since this average differs only slightly from the Navy one, it can be concluded that the two types of institutions were reasonably comparable.

Average Ratings of Food in One's Own Dining Facility

The respondents at all institutions were asked to rate 19 common foods as served in their dining halls. These foods were chosen because they were served at all sites and ran the gamut of all typical courses of a meal, from soups, entrees, starches, and vegetables, to dessert. Since no two dining facilities offered exactly the same complete list of items, these 19 were selected from those common to all sites. This allows the opportunity to compare different dining halls on a sample of common items, although it prohibits comparing them on all possible items.

The respondents gave their opinion of each item by selecting one number on a nine-point scale in which 1 means "dislike extremely," 5 indicates "neither like nor dislike," and 9 refers

to "like extremely." In other words, the higher the number chosen, the more the respondent liked that item as served in the dining hall. All the scores for the military sample were averaged separately from those of the civilian sample. The results can be seen in Table 5.

In Table 5 (and the succeeding several tables), scores which are statistically significant from each other are indicated by asterisks. Having no asterisks beside an item means the groups are so similar in rating that item that we cannot conclude that there is a meaningful group divergence at all.

In Table 5, most food items have a number of asterisks beside them, indicating that the military samples tended to rate the items in their dining halls in a significantly different way from how the civilian sample rated theirs. To be exact, on 16 of the 19 items, the differences were statistically significant. And in every case, including even the three nonsignificantly different items, the military rating was higher. In other words, there was an overwhelming trend towards the Navy subjects liking the food as prepared in Naval Enlisted Dining Facilities (EDF's) significantly more than did the civilian samples like the food as prepared in their resident dining halls. In fact, the overall average civilian rating across all 19 items was 4.9, almost at the neutral point of 5 on the scale, which refers to "neither like nor dislike." The overall average military rating across the same 19 items was 5.7, which is closer to 6 on the scale, which indicates "like slightly." Although the military sample

Table 5
Average Ratings¹ of Food Items in the Dining Hall

Item:	Military Rating	Civilian Rating
chicken noodle soup	6.1	5.3***
French onion soup	4.0	3.9
meat loaf	5.2	4.1***
macaroni and cheese	5.1	4.6**
pizza	6.0	5.3***
spaghetti w/meat sauce	6.0	4.8***
fried chicken	5.8	5.7
cheeseburger	6.1	5.5***
hamburgers	5.9	5.2***
grilled ham & cheese sandwich	6.1	4.9***
rice	5.2	4.6***
mashed potatoes	5.6	5.0***
French fries	6.3	5.9**
sweet potatoes	5.1	4.0***
carrots	5.3	4.5***
green beans	5.6	4.5***
spinach	4.9	3.9***
green peas	5.3	4.3***
chocolate cake	6.1	6.0
Overall average:	5.7	4.9***

¹Ratings are based on a nine-point scale in which 1 means "dislike extremely," 5 refers to "neither like nor dislike," and 9 indicates "like extremely."

**p<.01

***p<.001

rated its food significantly higher than did the civilian sample, it should be clear that there is considerable room for improvement in both groups (more on this below).

Simply the fact of a difference in ratings by the two groups would mean little by itself, however. Such a difference could merely result from some fundamental bias in sample selection, for instance, or from some difference in personality style. The fact that the two groups had comparable demographic characteristics, however, and the fact that the average food cost for the two groups was comparable, suggest that sampling bias did not account for the difference in ratings. But that would not rule out the possibility of differences due to varying consumer expectations and frames of reference. For instance, the Navy respondents may be saying in effect, "This isn't bad for military food," while the civilians may be saying, "This isn't as good as home food." It is impossible from the current data to test this hypothesis, however.

Another possible explanation for these group differences can be examined using these data. Perhaps the military respondents, for example, might tend to rate any survey questions higher. To check on that possibility, it is important to let both groups rate something about which they should both have generally the same reactions.

Average Ratings of Food in Commercial Dining Facilities

In the previous section, it became clear that Navy respondents rated the food overall in their dining halls almost

one full point higher on a nine-point scale compared to civilians rating the food in their resident dining facilities. Next, however, both groups were asked to rate the same 19 foods as served in commercial cafeterias and restaurants. Theoretically, both groups should have approximately the same responses to commercial food served outside of their respective institutions. The results are in Table 6. Only 9 of the 19 food items have asterisks indicating that the difference in rating between the Navy and civilian panels was statistically significant. In other words, for 10 out of 19 items, the two groups did not differ in their ratings to a significant extent. On the other hand, for these nine, in every case the military rating was somewhat higher. The overall military rating (6.9) was about one-third of a point higher than the overall civilian one (6.6), and this summary difference was statistically significant. In other words, there did appear to be a tendency for the Navy respondents to rate food higher in general than did the civilian ones.

However, both groups were far closer to each other in rating outside commercial food than in rating food within their own institutions. If one used the .3 overall average difference in Table 6 as a correction factor and subtracted it from the .8 overall average difference in Table 5, there would still be half a point difference, on the average, between Navy ratings of Navy food and civilian ratings of their institutional food. Therefore, one could conclude that, in terms of this questionnaire, the Navy's report card on EDF food was superior to

that for an average of four civilian counterparts.

Average Ratings of the Foodservice Environment in One's Own
Dining Facility

The survey respondents were asked to rate their satisfaction with 16 different aspects of the environment within their dining halls. They were to respond to each by selecting one number from a seven-point scale in which 1 means "extremely dissatisfied," 4 refers to "neither satisfied nor dissatisfied," and 7 indicates "extremely satisfied." It should be noted that this scale differs from the one used in the past two sections both in the number of scale points and in the choice of anchor words. When rating food they were asked how much they "liked" it; when rating the foodservice environment they were asked how "satisfied" they were with it. Therefore, average scores on these questions cannot be compared directly to average scores on those previous questions using a different scale.

The results on both groups rating their own institutions are in Table 7. The higher the number, the more positive the rating. On 4 out of the 16 items (portion size, dining hall staff, temperature of the dining areas, and air quality), the military and civilian groups did not differ significantly. However, on the remaining 12 there was a statistically significant difference. Of these 12, on only 3 (the noise level, waiting line, and number of available seats) did the civilian sample rate their dining halls superior. On the remaining nine, the military rating was significantly higher than the civilian one. These

Table 6

Average Ratings¹ of Food Items in Commercial Restaurants

Item:	Military Rating	Civilian Rating
chicken noodle soup	7.0	6.6*
French onion soup	5.7	5.7
meat loaf	6.3	5.9*
macaroni and cheese	6.6	6.4
pizza	7.9	7.7
spaghetti w/meat sauce	7.5	7.1**
fried chicken	7.3	7.3
cheeseburger	7.5	7.4
hamburgers	7.4	7.1*
grilled ham & cheese sandwich	6.9	6.6*
rice	6.4	6.4
mashed potatoes	6.8	6.6
French fries	7.5	7.5
sweet potatoes	6.0	5.7
carrots	6.1	5.7*
green beans	6.5	5.9***
spinach	5.8	5.3*
green peas	6.2	5.7*
chocolate cake	7.3	7.4
Overall average:	6.9	6.6**

¹Ratings are based on a nine-point scale in which 1 means "dislike extremely," 5 refers to "neither like nor dislike," and 9 indicates "like extremely."

*p<.05

**p<.01

***p<.001

Table 7
Average Ratings¹ of the Dining Hall Environment

Item:	Military Rating	Civilian Rating
noise level	4.1	4.4**
cleanliness	4.9	4.3***
number of items per meal	4.3	3.8***
waiting line	3.2	3.7***
preparation of food	4.0	3.5***
nutritional quality	4.5	3.9***
portion size	3.9	3.8
taste of food	4.1	3.1***
appearance of food	4.3	3.3***
dining hall staff	4.5	4.3
hours of operation	4.4	4.0***
appearance of dining areas	4.9	4.5***
lighting	5.3	4.9***
temperature of dining areas	4.6	4.5
air quality (smoke)	5.2	5.1
number of available seats	4.3	5.2***
Overall average:	4.4	4.1**

¹Ratings are based on a seven-point scale where 1 means "extremely dissatisfied," 4 indicates "neither satisfied nor dissatisfied," and 7 indicates "extremely satisfied."

**p<.01

***p<.001

nine covered such physical features as cleanliness, appearance of the dining areas, and lighting; the service condition of hours of operation; and the food-related conditions of the number of items per meal, preparation of food, nutritional quality, taste of the food, and appearance of the food.

These findings were not as clear cut as those concerning food evaluations, where the military rating was always higher than the civilian one. Nevertheless, when rating the foodservice environment, the trend towards the military system earning better ratings than the civilian one still held. On about half of the 16 items, the military system was rated significantly superior, while on only three did the civilian system rate significantly higher. The overall average military score of 4.4 was significantly higher than the overall civilian score of 4.1. The odds of this average difference occurring purely by chance or random fluctuation were less than one in a hundred. Therefore, we can conclude that the observed difference most likely reflects genuine differences in satisfaction.

However, it must be noted that both averages hovered around the neutral point of 4, which indicates "neither satisfied nor dissatisfied." In other words, both institutional settings clearly could use considerable improvement according to their customers. Compared to the civilian ratings, the military dining hall ratings suffered particularly in three areas which may prove difficult to change, especially afloat. These were the noise level, waiting line, and the number of available seats.

Improvements should be targeted towards those areas.

One final note on this section--one question asked how satisfied respondents were with the taste of their dining hall food, and another asked how satisfied they were with the food's appearance. In both cases, the military rating was a full point higher than the civilian one, which supports a similar difference found in the previous section where they rated 19 different named foods.

Average Ratings of the Foodservice Environment in Commercial Cafeterias/Restaurants

As a further check on the importance of the difference in ratings reported in the previous section, respondents were also asked to rate their satisfaction with 16 facets of the foodservice environment in commercial restaurants and cafeterias. On the average, the military and civilian respondents should both have approximately the same experiences with, and reactions toward, the foodservice environments outside their own institutions.

The findings are in Table 8. Of the 16 features rated, on only 3 of them was there a significant difference between the military and civilian ratings. On all three (preparation of food, cafeteria/restaurant staff, and air quality), the military rating was higher. Of the 13 features without significant differences, on ten of them the military rating was slightly, but not significantly, higher. On the remaining three features, the two groups produced tie ratings. In other words, for no feature

did the civilian rating turn out to be higher than the military one. In fact, the average military score of 5.5 was significantly higher than the civilian one of 5.3.

An overall difference of two-tenths of a point on a seven-point scale, though significant in a statistical sense, is not especially meaningful. It suggests a small trend for military respondents in this sample to rate foodservice environments a bit higher than did civilian respondents. If we use it as a correction factor in interpreting the previous section, we subtract two-tenths from the previous three-tenths, and are left with only a one-tenth of one point difference between the two groups as the presumably real difference in satisfaction with their own dining hall environments. This is clearly an unimportant difference.

Background Factors Relating to Dining Hall Food Ratings

The military and civilian samples differed both in background factors and in dining hall ratings. Could background factors be partly responsible for the differences in dining hall ratings? As an illustration, if the military sample were consistently older, and it became known that older people tended to rate food higher in general, then that might tend to explain why the military sample rated its food higher. The effect of some background factors was assessed by computing correlations between each factor and each type of foodservice rating. These correlations can take the value of any decimal fraction between -1.0 to +1.0. The larger the positive correlation, the more the

Table 8

Average Ratings¹ of Commercial Restaurant Environments

Item:	Military Rating	Civilian Rating
noise level	5.3	5.2
cleanliness	5.5	5.5
number of items per meal	5.7	5.6
waiting line	5.5	5.3
preparation of food	5.4	5.0***
nutritional quality	5.6	5.6
portion size	5.3	5.1
taste of food	5.3	5.2
appearance of food	5.8	5.7
cafeteria/restaurant staff	5.5	5.3*
hours of operation	5.6	5.5
appearance of dining areas	5.7	5.6
lighting	5.6	5.6
temperature of dining areas	5.6	5.4
air quality (smoke)	5.2	4.8**
number of available seats	5.5	5.2
Overall average:	5.5	5.3*

¹Ratings are based on a seven-point scale where 1 means "extremely dissatisfied," 4 indicates "neither satisfied nor dissatisfied," and 7 indicates "extremely satisfied."

*p<.05

**p<.01

***p<.001

Table 9
Military Background Factors Related to Foodservice Ratings

<u>Factor</u>	<u>Dining Hall Food</u>	<u>Commercial Food</u>	<u>Dining Hall Environ.</u>	<u>Commercial Foodservice Environment</u>
<u>Correlations</u> ¹				
Rank	.10	-.07	.07	.01
Age	.15***	.07	.10	.02
Education	.09	.10	.05	.01
<u>T-Tests</u>				
<u>Sex:</u>				
Male	5.7 ²	6.9 ²	4.4 ³	5.5 ³
Female	5.9	6.6	4.9*	5.4
<u>Race:</u>				
White	5.7	6.9	4.4	5.5
Nonwhite	5.8	6.8	4.4	5.5

¹Correlations are based on a scale running from -1.0 to +1.0. Larger negative fractions mean an increasing inverse relationship, while larger positive fractions indicate an increasing positive relationship.

²Numbers are based on the nine-point scale in which higher numbers indicate increased liking of a given food item.

³Numbers are based on the seven-point scale in which higher numbers indicate increased satisfaction with the given feature of the foodservice environment.

*p<.05

**p<.01

***p<.001

two variables are directly related, e.g., the older a person the more positive his attitude. The larger the negative correlation, the more the two variables are inversely related, e.g., the older a person the more negative his attitude. The effect of other background variables was assessed through t-tests. The average scores on the questionnaire were reported separately for each subgroup, e.g., males versus females and whites versus nonwhites, so that the difference between the two subgroups can be evaluated statistically.

The results for the military sample are in Table 9. The first column of data reveals the correlations and t-tests relating the various background factors to the respondents' overall average rating of the food in their respective dining halls. The factor of age produced a statistically significant, though rather small, correlation of .15. This means that there was a slight tendency among military respondents for increasing age to be associated with more favorable attitudes toward dining hall food. (This may reflect not just age, per se, but years of service eating Navy food). Similarly, in evaluating the dining hall environment, there was a slight tendency for females to rate it higher than males. The average score for females was 4.9, while that of males was 4.4. Since there were so few females in either sample, however, then this small gender difference probably had very little effect overall. In the military sample, rank, education, and race all had no significant impact on any of the ratings.

The civilian background factors related to foodservice ratings can be seen in Table 10. Within this sample, rank (expressed in terms of salary levels) and age did correlate positively with ratings of food--both in the dining hall and in the outside commercial world. Education correlated positively with ratings of commercial food but negatively with ratings of the dining hall environment. In other words, the more educated the civilian respondent, the higher he was likely to rate outside commercial food and the lower he was likely to rate his dining hall environment. In the civilian sample, there was no difference by gender, but a small difference by race--nonwhites gave slightly lower ratings to the dining hall environment than did whites.

Putting the impact of all these background factors together, the only one likely to make any difference is age. As Table 3 indicated, the military sample tended to be slightly older on average than did the civilian one. Yet in each sample, there was a trend for older individuals to like the dining hall food more. And it was precisely on the section of dining hall food ratings that the military sample scored the greatest amount more than the civilian sample. In other words, the relatively large difference in ratings of dining hall food can be at least partly explained by the greater age of respondents in the military sample.

Another background factor important to consider is differences among the various types of sites. There is a common perception, for example, that Navy foodservice conditions afloat

Table 10

Civilian Background Factors Related to Foodservice Ratings

<u>Factor</u>	<u>Dining Hall Food</u>	<u>Commercial Food</u>	<u>Dining Hall Environ.</u>	<u>Commercial Foodservice Environment</u>
<u>Correlations¹</u>				
Salary	.20***	.20***	.08	-.04
Age	.22***	.28***	-.08	-.04
Education	.11	.29***	-.17**	-.02
<u>T-Tests</u>				
<u>Sex:</u>				
Male	4.9 ²	6.7 ²	4.1 ³	5.3 ³
Female	5.2	6.3	4.3	5.5
<u>Race:</u>				
White	4.9	6.7	4.2	5.3
Nonwhite	5.0	6.4	3.9*	5.3

¹Correlations are based on a scale running from -1.0 to +1.0. Larger negative fractions mean an increasing inverse relationship, while larger positive fractions indicate an increasing positive relationship.

²Numbers are based on the nine-point scale in which higher numbers indicate increased liking of a given food item.

³Numbers are based on the seven-point scale in which higher numbers indicate increased satisfaction with the given feature of the foodservice environment.

*p<.05

**p<.01

***p<.001

are often worse than those ashore. To check on this, the average ratings of all the ashore respondents was compared to that of all the sailors afloat. Over all items, the afloat subjects did rate their food (5.5) significantly ($p < .03$) but only slightly worse than did the ashore subjects (5.8). The difference in ratings of commercial food was not significant. However, the average rating of the foodservice environment afloat (3.8) was significantly lower ($p < .001$) than that ashore (4.7). And the average rating by afloat subjects of the commercial foodservice environment (5.7) was significantly higher ($p < .002$) than that of the ashore subjects (5.4), perhaps indicating a slight glamorization of the environment elsewhere due to a perceived relative deprivation in the Navy.

Among the civilian sites there was also one, Civilian Site A, rated significantly lower than the rest. This was the site with the lowest food cost, as seen in Table 4, yet the significant difference related not to the food but to the environment. Group A rated its environment 3.8, compared to the other civilian sites' overall rating of 4.3 ($p < .001$). There were no significant differences in rating commercial food or foodservice environments. In other words, both the Navy sample and the civilian sample had a subgroup with significantly lower ratings than the rest of the respective samples.

A Comparison of Ratings of Own Dining Hall Food and Environment Versus Commercial Food and Environment

The previous data analysis and discussion indicated that the

military subjects tended to rate food and foodservice environments (either their own or those in outside establishments) somewhat higher than did the civilian subjects. This suggests the Navy's foodservice system is superior to that of other similar institutional environments. But there is another side to this coin which has not yet been explored. That is, how does the Navy system compare to commercial civilian foodservice establishments outside of institutionalized environments?

In Table 11, it is clear that the military subjects rated the food in commercial restaurants and cafeterias significantly higher than the food in their own dining halls. Specifically, on all 19 items they rated the commercial food significantly higher, with an average rating of 6.9 for commercial food, compared to 5.7 for military food. Similarly, Table 12 indicates that on 15 out of 16 environmental characteristics, the military subjects rated the commercial world significantly superior, with an average rating of 5.5 for commercial foodservice environments, compared to only 4.4 for Navy dining hall environments. The sole exception was air quality, the trait on which both types of environments were rated the same.

The comparisons were similar for the civilian subjects. Table 13 indicates that they rated all 19 food items significantly superior on the outside, with an overall average of 6.6 for commercial food and only 4.9 for civilian institutional food. Table 14 indicates that on 15 of 16 environmental traits,

Table 11

Military Ratings¹ of Dining Hall Versus Commercial Food Items

Item:	Dining Hall	Commercial
chicken noodle soup	6.1	7.0***
French onion soup	4.0	5.7***
meat loaf	5.2	6.3***
macaroni and cheese	5.1	6.6***
pizza	6.0	7.9***
spaghetti w/meat sauce	6.0	7.5***
fried chicken	5.8	7.3***
cheeseburger	6.1	7.5***
hamburgers	5.9	7.4***
grilled ham & cheese sandwich	6.1	6.9***
rice	5.2	6.4***
mashed potatoes	5.6	6.8***
French fries	6.3	7.5***
sweet potatoes	5.1	6.0***
carrots	5.3	6.1***
green beans	5.6	6.5***
spinach	4.9	5.8***
green peas	5.3	6.2***
chocolate cake	6.1	7.3***
Overall average:	5.7	6.9***

¹Ratings are based on a nine-point scale in which 1 means "dislike extremely," 5 refers to "neither like nor dislike," and 9 indicates "like extremely."

**p<.01

***p<.001

Table 12

Military Ratings¹ of the Dining Hall VS Commercial Environments

Item:	Dining Hall	Commercial
noise level	4.1	5.3***
cleanliness	4.9	5.5***
number of items per meal	4.3	5.7***
waiting line	3.2	5.5***
preparation of food	4.0	5.4***
nutritional quality	4.5	5.6***
portion size	3.9	5.3***
taste of food	4.1	5.3***
appearance of food	4.3	5.8***
dining hall staff	4.5	5.5***
hours of operation	4.4	5.6***
appearance of dining areas	4.9	5.7***
lighting	5.3	5.6***
temperature of dining areas	4.6	5.6***
air quality (smoke)	5.2	5.2
number of available seats	4.3	5.5***
Overall average:	4.4	5.5***

¹Ratings are based on a seven-point scale where 1 means "extremely dissatisfied," 4 indicates "neither satisfied nor dissatisfied," and 7 indicates "extremely satisfied."

**p<.01

***p<.001

Table 13

Civilian Ratings¹ of Dining Hall VS Civilian Food Items

Item:	Dining Hall	Commercial
chicken noodle soup	5.3	6.6***
French onion soup	3.9	5.7***
meat loaf	4.1	5.9***
macaroni and cheese	4.6	6.4***
pizza	5.3	7.7***
spaghetti w/meat sauce	4.8	7.1***
fried chicken	5.7	7.3***
cheeseburger	5.5	7.4***
hamburgers	5.2	7.1***
grilled ham & cheese sandwich	4.9	6.6***
rice	4.6	6.4***
mashed potatoes	5.0	6.6***
French fries	5.9	7.5***
sweet potatoes	4.0	5.7***
carrots	4.5	5.7***
green beans	4.5	5.9***
spinach	3.9	5.3***
green peas	4.3	5.7***
chocolate cake	6.0	7.4***
Overall average:	4.9	6.6***

¹Ratings are based on a nine-point scale in which 1 means "dislike extremely," 5 refers to "neither like nor dislike," and 9 indicates "like extremely."

**p<.01

***p<.001

Table 14

Civilian Ratings¹ of the Dining Hall VS Commercial Environments

Item:	Dining Hall	Commercial
noise level	4.4	5.2***
cleanliness	4.3	5.5***
number of items per meal	3.8	5.6***
waiting line	3.7	5.3***
preparation of food	3.5	5.0***
nutritional quality	3.9	5.6***
portion size	3.8	5.1***
taste of food	3.1	5.2***
appearance of food	3.3	5.7***
dining hall staff	4.3	5.3***
hours of operation	4.0	5.5***
appearance of dining areas	4.5	5.6***
lighting	4.9	5.6***
temperature of dining areas	4.5	5.4***
air quality (smoke)	5.1	4.8**
number of available seats	5.2	5.2
Overall average:	4.1	5.3***

¹Ratings are based on a seven-point scale where 1 means "extremely dissatisfied," 4 indicates "neither satisfied nor dissatisfied," and 7 indicates "extremely satisfied."

**p<.01

***p<.001

the civilians rated commercial restaurants and cafeterias as being superior, with an overall average of 5.3 versus 4.1 for their own institutional foodservice environments. The sole exception was the number of available seats, the trait on which the civilian subjects rated both types of environments about the same.

In short, both military and civilian subjects rated the outside commercial restaurants and cafeterias as being significantly superior in almost every way to their own dining hall food and environments. Thus, Navy dining halls clearly have much room for improvements as compared to their outside commercial foodservice competition.

Menu Analysis

The Surgeon General's Report on Nutrition and Health⁵ (1988) supports the current nutrition policy as stated in the Dietary Guidelines for Americans issued jointly by the Department of Agriculture and the Department of Health and Human Services. The first of the seven recommendations is to "Eat a variety of foods." The Report reaffirms the recommendation "to consume a dietary pattern that contains a variety of foods....".

The extent of variety in the diet must continually be evaluated². Consequently, a comparison of menu variety was used as one of two measures of diet quality. Because the cycle menu (7 days per cycle) varied from 5-33 weeks for the civilian settings and 5-6 weeks in Navy settings, a random sample of one week (7 days) was selected for each site.

To determine variety for each of seven sites, all food items were first classified as either fruit, dessert, starch, entree, appetizer, vegetable, or salad. A complete list of menu items may be found in Appendix B. Similar food items were sorted into a food category and then combined to yield a total. The mean number of foods available and their standard errors were then determined separately for Navy sites and civilian sites. These values are found in Table 15. No statistically significant differences were found between the two populations, although as seen in Figure 1 there is a trend that indicates the Navy clearly offered more than two times the total number of food items and exceeded the civilian feeding sites in all categories with the exception of fruit.

In some of the menus, the same foods (hamburgers, frankfurters, etc) appeared almost daily. To differentiate between the total number of different food items offered, repetitive items were excluded from further analysis. Table 16 indicates that significant differences were found for appetizer ($P < .05$) and vegetable categories ($p < .01$). The main reason that more differences between the two feeding sites were not significant is due to the large variability among the three Navy sites and the large variability among the four civilian sites (see standard errors or SE's in Table 16). Variability may be due to the sites selected for this study. The civilian sites, for example, included a federal training institution, two civilian institutions sponsored by the government and a national

Table 15

Comparison of Mean Number of Total Food Items Available
(Including Repetitive Items) over 7-Day Period

COMPONENTS	Navy (N=1347)		Civilian (N=748)	
	Mean	(+SE)	Mean	(+SE)
Fruit	24.3	(10.5)	31.5	(6.3)
Dessert	61.3	(21.7)	20.5	(12.2)
Starch	112.0	(33.2)	47.3	(8.6)
Entree	180.7	(69.6)	50.0	(9.8)
Appetizer	15.3	(0.9)	8.8	(3.4)
Vegetable	33.3	(4.6)	16.5	(1.6)
Salad	22.0	(8.0)	12.5	(2.2)
Total Food	449.0	(144.0)	187.0	(39.1)

Table 16

Comparison of Mean Number of Total Food Items Available
(Excluding Repetitive Items) over 7-Day Period

COMPONENTS	Navy (N=430)		Civilian (N=415)	
	Mean	(+SE)	Mean	(+SE)
Fruit	4.7	(0.7)	12.0	(3.7)
Dessert	18.0	(2.6)	15.3	(8.0)
Starch	29.3	(3.9)	20.0	(3.4)
Entree	52.7	(7.0)	37.0	(7.8)
Appetizer	13.0	(0.6)	5.3	(1.8)*
Vegetable	21.0	(0.6)	11.8	(1.3)**
Salad	4.7	(3.7)	2.5	(0.6)
Total Food	143.3	(13.1)	103.8	(24.4)

* $p < .05$

** $p < .01$

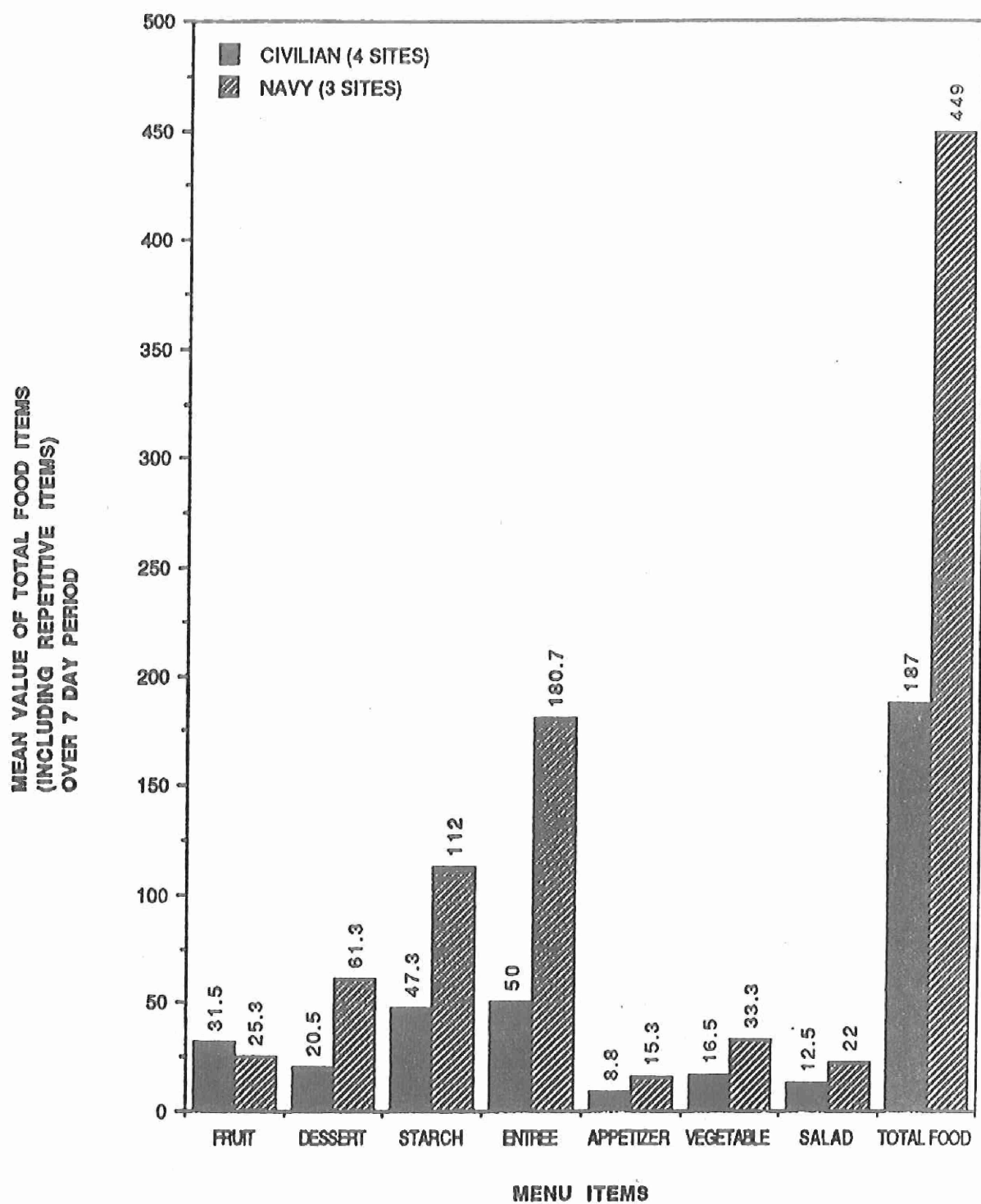


Figure 1. Comparison of Menu Items Including Repetitive Ones

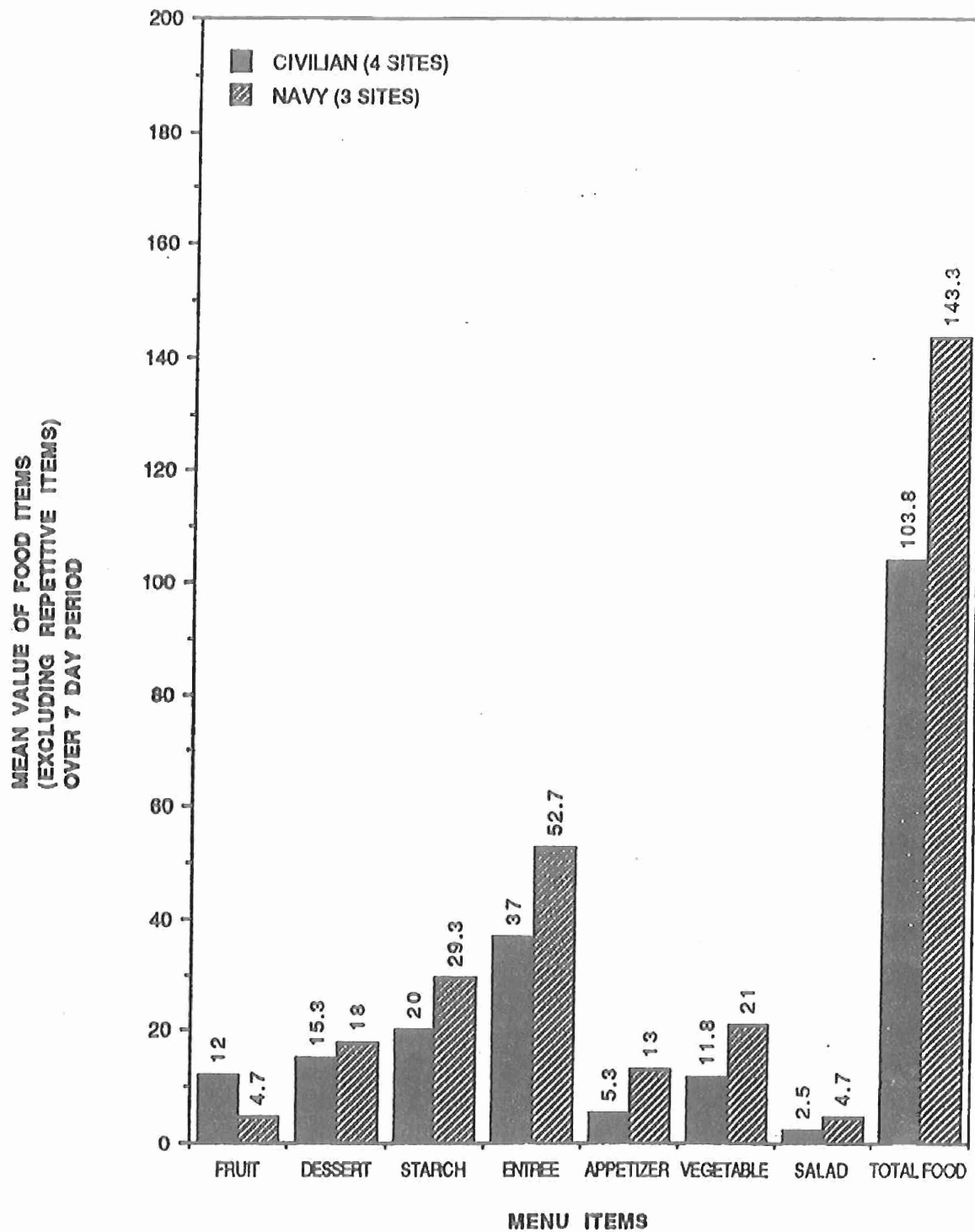


Figure 2. Comparison of Menu Items Excluding Repetitive Ones

park. Menu variety would depend upon the population served. Consequently, a transient population such as that found in a national park would require a menu offering less variety than one which fed the same population daily over a period of time. Variability among the Navy sites may be due to the comparison of three ashore sites to afloat sites where variety is more limited. Regardless of the variability among sites, Figure 2 indicates that the Navy once again offered a greater variety of food except for the fruit category.

Menu planning is considered to be an extremely important responsibility by the Navy. The guidelines indicate that menus must, 1) provide the essential nutrients to meet the Military Recommended Dietary Allowances³, 2) provide enjoyable meals which offer a number of food choices that meet the needs of sailors from different geographical areas and ethnic groups, and 3) stay within certain specified cost limits⁴. Clearly, The Surgeon General's Report emphasizes the need for variety and expands the recommendation to include the phrase, "provided that these foods are generally low in calories, fat, saturated fat, cholesterol, and sodium⁵. These additional recommendations must be taken seriously and new guidelines for menu planning (last updated in 1979) developed to meet the current needs of the Navy.

Nutrient Analysis

Two problems had to be addressed before nutrient analysis could be performed: (1) menus from each of the 7 sites containing several choices of fruits, entrees, etc., per day had to be made

into a sample meal plan (Tables 17 & 18) for an individual and (2) the cycle menu varying from 5-33 weeks had to be made more manageable and consistent between sites. To solve these problems, the following procedure was developed: for each of seven sites one hypothetical "week" of seven days was created by randomly selecting each day of the week separately (e.g. Site A: Monday of week 1, Tuesday of week 3, etc.). This yielded a new database with only one "average" week per site. Using this new database, 700 food records were generated for each day of the week for each site (yield = 700 records/site). These food records were generated using the Sample Meal Plan, then assigned portion sizes from SB 10-264⁹, and the mean for one day was determined for the Navy and civilian population. Food Processor II¹⁰ was the database used to code and analyze the nutrient content of selected menus.

Means for selected nutrients were compared to the Military Recommended Dietary Requirements (MRDA). Analysis of the nutrient content of the menus revealed that the Navy either met or exceeded the MRDA³ for all nutrients with the exception of folacin (Table 19). A recent publication¹¹ indicated that the U.S. population generally is unable to meet the MRDA for folacin. In our study, the mean was 381 mcg, which met 94% of the MRDA, whereas average intake for male adults in the U.S. is 281 mcg¹¹. The civilian population, however, was deficient in several nutrients such as energy, folacin, Vitamin B₆, and zinc. Although there is no MRDA for cholesterol, the National Research

Table 17
Sample Meal Plan*

Breakfast Pattern

1--Breakfast Appetizer (Fruit or Juice)
1--Breakfast Entree
2--Starch Servings (Cereal, Bread, Breakfast Pastry)
1--Fat Serving
1--Cup 2% Milk
Coffee or Tea

Lunch Pattern

1--Lunch Appetizer (Fruit, Fruit Juice, Fruit Cup, Soup)
1--Lunch Entree
2--Starch Servings (Bread, Potato, Rice or Substitute)
1--Vegetable
1--Salad
1--Fat Serving
1--Dessert
1--Cup 2% Milk
Coffee or Tea

Dinner Pattern

1--Dinner Appetizer (Fruit, Fruit Juice, Fruit Cup, Soup)
1--Dinner Entree
1--Starch Serving
1--Vegetable
1--Salad
1--Fat Serving
1--Dessert Serving
Coffee or Tea

*Adapted from 1500-1700 Calorie Meal Plan, Armed Forces Recipe Services, Change 2, 1987.

Table 18

Sample Meal Plan*

Navy Man 22 Years 5'9" 160 lbs Moderately Active

Breakfast

5 oz Orange Juice
2 Scrambled Eggs
2 slices Bacon
2 servings Coffee Cake
1 tsp Butter
1 cup 2% Milk
Coffee or Tea

Lunch

4.5 oz Pot Roast
2 tbsp Beef Gravy
1/2 cup Scalloped Potato
1 slice White Bread
1/2 cup Asparagus
1.75 oz Lettuce Wedge
2 tbsp Salad Dressing
1 tsp Butter
1 Apple
1--cup 2% Milk
Coffee or Tea

Dinner

4 oz Fried Chicken
1/2 cup Mashed Potato
1/2 cup Peas
1 slice White Bread
1 oz Lettuce & Tomato Salad
2 tbsp Salad Dressing
1 tsp Butter
1 piece Cherry Pie
Coffee or Tea

*Adapted from 1500-1700 Calorie Meal Plan, Armed Forces Recipe Services, Change 2, 1987.

Table 19

Mean Daily Analysis of Selected Nutrients Over 7 Days
Comparing Navy and Civilian Menu Items

NUTRIENTS	MRDA	Navy M (SD)	%MRDA	Civilian M (SD)	%MRDA
Energy (KCal)	3200 ¹	4284 (132)	134	3013 (65)	89
Protein (g)	100	181 (14)	179	125 (4)	119
Carbohydrate (g)	None	407 (15)	-	326 (6)	-
Dietary Fiber (g)	None	27 (2)	-	22 (0.7)	-
Fat-Total (g)	None	222 (10)	-	138 (5)	-
Fat-Saturated (g)	None	71 (3)	-	52 (2)	-
Fat-Monounsaturat (g)	None	78 (4)	-	48 (2)	-
Fat-Polyunsaturat (g)	None	57 (3)	-	28 (2)	-
Cholesterol (mg)	None	786 (75)	-	645 (59)	-
Vitamin A (mcg RE)	1000	1909 (413)	177	2006 (426)	187
Ascorbic Acid (mg)	60	189 (25)	314	126 (9)	201
Thiamin (mg)	1.6	3 (0.1)	188	2 (0.1)	141
Riboflavin (mg)	1.9	3 (0.2)	180	3 (0.2)	156
Niacin (mg)	21	43 (2)	202	30 (1)	133
Folacin (mcg)	400	381 (31)	94	320 (12)	75
Vitamin B ₆	2.2	3 (0.1)	127	2 (0.1)	94
Vitamin E (mg)	10	44 (5)	474	20 (1)	201
Vitamin B ₁₂ (mcg)	3.0	12 (3)	356	13 (4)	362
Calcium (mg)	800 ²	1601 (75)	194	1437 (39)	172
Iron (mg)	10 ²	25 (1)	247	21 (0.5)	196
Magnesium (mg)	350 ²	441 (11)	124	366 (6)	101
Phosphorous (mg)	800 ²	2493 (83)	312	1987 (50)	239
Potassium (mg)	None	4925 (154)	-	3995 (103)	-
Sodium (mg)	3300 ³	7184 (345)	221	4966 (169)	143
Zinc (mg)	15	20 (1.2)	135	15 (0.5)	98

% MACRONUTRIENTS FROM ENERGY

	Navy	Civilian
Cal from Carbohydrates:	38%	43%
KCal from Protein:	16%	16%
KCal from Fat:	46%	41%

Notes:

¹MRDA for moderately active male, ages 17 to 50 years, is based on the RDA, ninth revised edition, 1980.

²Lowest value of range used. Refer to MRDA found in Appendix.

³Maximum safe and adequate level for daily sodium intake published in the RDA, ninth edition, 1980.

Council² recommends less than 300 mgms. daily. The Navy and civilian populations clearly exceeded that value by double the amount. In addition, the sodium content of the Navy menu (7184 mgms.) and the sodium content of the civilian menu (4966 mgms.) clearly exceeded the maximum safe and adequate level for daily sodium intake of 3300 mg³.

To determine whether the analysis of the Navy menus is comparable to actual food intake, data collected from SEAL (SEa, Air, Land forces)¹² trainees in 1986 were compared with a nutrient analysis of Navy menus. SEAL energy intake was 3,886 kcal and exceeded the MRDA of 3200 kcal. SEALs were in training at the time of this study and required additional calories to meet the energy needs of increased physical activity. Consequently, the nutrient intake of the SEALs could not be used for analysis and three Army garrison feeding studies^{13,14,15} were selected for comparison with the Navy menus. Mean energy intake ranged from 2978-3173 kcal and was slightly below the MRDA. Mean carbohydrate intake ranged from 356-378 g, mean protein fell between 111-125 g, and mean fat ranged between 37.4-38.2 g. When expressed as a percent of total kcal, carbohydrate contributed 46.4-46.8 %, protein contributed 15-16%, and 37.4-38.2% came from fat. The Navy menus contributed 38% of total kcal from carbohydrate, 16% from protein, and 46% from fat. This information indicates nutrient analysis of the Navy menus was similar to the Army studies in protein content, but exceeded the Army in the content of fat and was much lower in carbohydrate.

The AR 40-25 provides the following guidelines: 50-55% of total kcal from carbohydrate, less than 35% from fat, and the remainder from protein. It is clear that both the Navy and the Army exceed the percent of kcal from fat and do not meet the recommendations for carbohydrate. The Department of Defense Food Service mandates that food served in garrison and on shipboard must meet the nutrition initiatives to provide a healthier diet by reducing salt, fat and cholesterol. It is clear the menus offered by the Navy exceeded these values.

Conclusions and Recommendations

1. This study found the Navy's average daily food cost was \$3.46 as compared to an average food cost of \$3.73 among the equivalent civilian institutions. Although these figures were relatively close, the disparity in food costs still suggests the Basic Daily Food Allowance be increased to insure full comparability.

2. The Navy sample rated its dining hall food significantly higher than did the civilian sample rate its institutional food. However, at least part of this difference can be traced to differences in sample composition, since the Navy sample had older respondents, and older respondents tended to rate institutional food higher.

3. The Navy sample rated the dining hall environment significantly higher than did the civilian sample rate theirs. However, when the control factor based on ratings of commercial establishments was subtracted, this difference between samples was substantially reduced. In particular, the Navy scored significantly worse on noise level, waiting line, and the number of available seats--three factors which should be targeted for improvements.

4. Although the Navy respondents generally rated their food and foodservice environments higher than did the civilian respondents, the Navy rated commercial food and foodservice environments even higher. In other words, Navy dining halls were seen as being distinctly inferior to commercial restaurants and

cafeterias. Thus they have considerable room for improvement both in the areas of food and foodservice environments.

5. The analysis of Navy menus indicates the variety of food offered is more than adequate. The guidelines for menu planning, however, have not been updated since 1979 and should be revised to meet the Surgeon General's recent recommendation to provide a variety of foods low in calories, fat, cholesterol, and sodium.

6. The Navy clearly exceeded the Military Recommended Dietary Allowances for all nutrients with the exception of folacin. New menu guidelines as recommended above, changes in the Armed Forces Recipes to meet nutrition initiatives, and the education of cooks to incorporate these changes are the steps required to reduce fat, cholesterol, and sodium, and to increase carbohydrate in Navy menus.

7. A survey of Navy personnel to determine the number of nutritional studies conducted on the Navy over the past 5-10 years produced only one study published in the open literature (SEALS). Consequently, current nutritional studies are needed to determine what the Navy is actually eating.

This document reports research undertaken at the US Army Natick Research, Development and Engineering Center and has been assigned No. NATICK/TR-91/011 in the series of reports approved for publication.

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Appendix A: Navy Questionnaire

APPENDIX A

NAVY QUESTIONNAIRE

This dining hall has been chosen by the Natick Research, Development and Engineering Center for a survey of its foodservice operations. By completing this questionnaire, you will help us decide what foodservice you prefer. Please use a No. 2 pencil. Answer honestly and do not put your name on the form. When you have completed the questionnaire, please hand it to one of the survey collectors or drop it in the box provided. Your time and effort are appreciated in completing this questionnaire
THANK YOU.

1. In what country or state have you lived most of your life? _____

DO NOT WRITE IN BOX

2. What is your rank? Fill in one circle.

☐ E-1 to E-4
☐ W-1 to O-4

☐ E-5 to E-6
☐ O-5 to O-10

☐ E-7 to E-9

3. What is your age? _____ yrs.

DO NOT WRITE
IN BOX

4. What is your gender? ☐ MALE

☐ FEMALE

5. Do you live in the housing provided? ☐ YES

☐ NO

6. If yes, what is the total length of time you have lived in the housing?

_____ years _____ months

7. What is the highest level of education you have completed?

☐ Finished grade school
☐ Some high school
☐ High school graduate or graduate equivalency (GED)

☐ Some college
☐ College graduate

8. What is your race/ethnic background?

☐ White (not Hispanic)
☐ Black
☐ Hispanic

☐ Asian/Pacific Islander
☐ American Indian/Alaskan native
☐ Other (Please specify) _____

9. Please fill in the circles for the meals you usually eat in this dining hall.

	M	Tu	W	Th	F
Breakfast	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lunch	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dinner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Sa	Su
Breakfast	<input type="radio"/>	<input type="radio"/>
Brunch/Lunch	<input type="radio"/>	<input type="radio"/>
Dinner	<input type="radio"/>	<input type="radio"/>

10. If you do not eat the food in this dining hall during the week, do you usually:

Skip the meal
Eat at a club/restaurant/snack shop
Bring food to the dining hall
Eat at the dormitory
Eat at home
Buy food at vending machine
Other (Please specify) _____

BREAKFAST

LUNCH

DINNER

☐
☐
☐
☐
☐
☐
☐

☐
☐
☐
☐
☐
☐
☐

☐
☐
☐
☐
☐
☐
☐

11. Please use the scale provided below to rate how you like the following foods.

NEVER TRIED	DISLIKE EXTREMELY	DISLIKE VERY MUCH	DISLIKE MODERATELY	DISLIKE SLIGHTLY	NEITHER LIKE NOR DISLIKE	LIKE SLIGHTLY	LIKE MODERATELY	LIKE VERY MUCH	LIKE EXTREMELY
0	1	2	3	4	5	6	7	8	9

IN THIS DINING HALL:

	0	1	2	3	4	5	6	7	8	9
Chicken Noodle Soup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
French Onion Soup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Meat Loaf	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Macaroni and Cheese	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pizza	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Spaghetti w/Meat Sauce	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fried Chicken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cheeseburger	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hamburgers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Grilled Ham and Cheese Sandwich	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mashed Potatoes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
French Fries	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sweet Potatoes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Carrots	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Green Beans	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Spinach	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Green Peas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chocolate Cake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

IN A COMMERCIAL CAFETERIA/RESTAURANT:

	0	1	2	3	4	5	6	7	8	9
Chicken Noodle Soup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
French Onion Soup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Meat Loaf	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Macaroni and Cheese	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pizza	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Spaghetti w/Meat Sauce	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fried Chicken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cheeseburger	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hamburgers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Grilled Ham and Cheese Sandwich	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mashed Potatoes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
French Fries	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sweet Potatoes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Carrots	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Green Beans	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Spinach	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Green Peas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chocolate Cake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. Please use the scale provided below to rate your satisfaction with the foodservice and environment.

EXTREMELY DISSATISFIED	MODERATELY DISSATISFIED	SLIGHTLY DISSATISFIED	NEITHER SATISFIED NOR DISSATISFIED	SLIGHTLY SATISFIED	MODERATELY SATISFIED	EXTREMELY SATISFIED
1	2	3	4	5	6	7

IN THIS DINING HALL:

	1	2	3	4	5	6	7
Noise level	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cleanliness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Number of items per meal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Waiting line	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Preparation of food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nutritional quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Portion size	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Taste of food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Appearance of food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dining hall staff	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hours of operation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Appearance of dining areas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lighting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Temperature of dining areas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Air quality (smoke)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Number of available seats	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

IN A COMMERCIAL CAFETERIA/RESTAURANT:

	1	2	3	4	5	6	7
Noise level	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cleanliness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Waiting line	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Preparation of food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nutritional quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Portion size	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Taste of food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Appearance of food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Number of items per meal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cafeteria/restaurant staff	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hours of operation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Appearance of dining areas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lighting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Temperature of dining areas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Air quality (smoke)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Number of available seats	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix B: Menu Classification

APPENDIX B

VARIETY - NAVY MENU STUDY BY WEEK (7 DAYS)

SITE	RNAME	FOOD_GRP	COUNT
A	Beef Barley Soup	a	1
A	Chicken Noodle	a	1
A	Chicken Rice Soup	a	1
A	Clam Chowder	a	1
A	Cream of Broccoli Soup	a	1
A	Tomato Juice	a	1
A	Trail Mix	a	1
A	Boston Cream Pie	d	1
A	Bread Pudding	d	1
A	Cheesecake w/Cherry Topping	d	1
A	Chocoholics Delight	d	1
A	Chocolate Cream Pie	d	1
A	Chocolate Pudding w/Whipped Topping	d	1
A	Gelatin	d	1
A	Peanut Butter Pie	d	1
A	Rice Pudding w/Whipped Topping	d	1
A	Sundaes	d	1
A	Vanilla Wafers	d	1
A	American Cheese Sandwich	e	1
A	BBQ Kidney Beans	e	1
A	BBQ Ribs	e	1
A	Bacon, Lettuce & Tomato Sandwich	e	1
A	Baked Ham w/Raisin Sauce	e	1
A	Baked Meat Loaf	e	1
A	Beef Tortellini w/Sauce	e	1
A	Bologna Sandwich	e	1
A	Buttered Grits	e	1
A	Cheese Sandwich	e	1
A	Cheeseburgers	e	1
A	Chicken Nuggets w/Sauces	e	1
A	Chicken Sandwich	e	1
A	Corned Beef Hash	e	2
A	Creamed Beef	e	1
A	Eggs to Order	e	1
A	French Toast	e	2
A	Fried Chicken	e	1
A	Fried Ham Slice	e	1
A	Fruit Yogurt	e	1
A	Grilled Cheese & Tomato Sandwich	e	1
A	Grilled Ham & Cheese Sandwich	e	1
A	Ham & Swiss Cheese Sandwich	e	1
A	Hamburgers	e	1
A	Hot Dogs	e	2
A	Macaroni & Cheese w/Topping	e	1
A	Peanut Butter & Jelly Sandwich	e	1
A	Pickle & Pimiento Loaf Sandwich	e	1
A	Poached Eggs	e	1
A	Potted Beef	e	1
A	Ravioli	e	1
A	Sausage Patties	e	2
A	Scrambled Eggs	e	1
A	Seafood Salad Sandwich	e	1
A	Shrimp in a Basket	e	1
A	Sliced Bacon	e	1

VARIETY - NAVY MENU STUDY
BY WEEK (7 DAYS)

SITE	RINAME	FOOD_GRP	COUNT
A	Soft Boiled Eggs	e	1
A	Spaghetti w/Italian Sauce	e	1
A	Turkey Breast Sandwich	e	1
A	Turkey a la King on Toast Points	e	1
A	Veal Parmigiana	e	1
A	Western Sandwich	e	1
A	Apple Juice	f	7
A	Baked Apple	f	1
A	Cider	f	1
A	Cranberry Juice Cocktail	f	1
A	Fresh Apple (Cook's Choice)	f	1
A	Fresh Apples	f	3
A	Fresh Cantaloupe	f	1
A	Fresh Fruit Cup	f	1
A	Fresh Oranges	f	2
A	Fresh Pear	f	1
A	Fresh Plum	f	1
A	Grape Juice	f	7
A	Orange Juice	f	7
A	Cole Slaw	s	2
A	Lettuce, Tomato & Onions	s	2
A	Salad Bar	s	7
A	Tossed Salad	s	5
A	Assorted Breads	st	7
A	Assorted Toast	st	2
A	Bread	st	4
A	Buttered Noodles	st	1
A	Cornbread	st	1
A	Cream of Wheat	st	3
A	Farina	st	1
A	French Fries	st	4
A	Garlic Bread	st	1
A	Hashed Brown Potatoes	st	6
A	Italian Bread	st	1
A	Muffins	st	7
A	Noodles	st	1
A	Oatmeal	st	1
A	Parker House Rolls	st	1
A	Pasta	st	2
A	Toast	st	4
A	Whipped Potatoes	st	4
A	Brussels Sprouts	v	1
A	Carrots	v	1
A	Collard Greens	v	2
A	Green Beans	v	1
A	Green Peas	v	1
A	Lima Beans	v	2
A	Mixed Vegetables	v	1
A	Onion Rings	v	1
A	Peas 'n Onions	v	1
A	Spinach	v	1
A	Wax Beans	v	3

VARIETY - NAVY MENU STUDY
BY WEEK (7 DAYS)

Number of cases read = 106 Number of cases listed = 106

VARIETY - NAVY MENU STUDY
BY WEEK (7 DAYS)

SITE	RINAME	FOOD_GRP	COUNT
B	Chicken Noodle	a	4
B	Clam Chowder	a	2
B	Cream of Broccoli Soup	a	1
B	Cream of Mushroom	a	4
B	French Onion Soup	a	1
B	Tomato Soup	a	2
B	Apple or Cherry Cobbler	d	1
B	Chocolate Pudding	d	1
B	German Chocolate Cake	d	1
B	Ice Cream	d	2
B	Jell-o Cheesecake	d	1
B	Pumpkin Pie	d	1
B	Sherbet	d	1
B	Bacon	e	4
B	Bacon Burger	e	1
B	Beef Stew	e	1
B	Beef Stroganoff	e	1
B	Breaded Pork Chop	e	1
B	Broccoli Rice Casserole	e	1
B	Broiled Ham Steak w/Fruit Sauce	e	1
B	Cheese Torte Italiano	e	1
B	Cheeseburgers	e	6
B	Chicken Sandwich	e	1
B	Chili	e	1
B	Cottage Cheese	e	5
B	Eggplant Parmesan	e	1
B	Eggs to Order	e	7
B	Fish Sandwich	e	1
B	Fish in Lemon Sauce	e	1
B	French Toast	e	3
B	Grilled Cheese Sandwich	e	2
B	Grilled Cheese with Ham	e	2
B	Hamburgers	e	6
B	Layered Hamburger Bake	e	1
B	Liver and Onions	e	1
B	Meat Loaf w/Brown Gravy	e	1
B	Omelette	e	2
B	Oven Fried Chicken	e	1
B	Pork Chow Mein	e	1
B	Roasted Turkey w/Gravy	e	1
B	Sausage	e	3
B	Sweet & Sour Pork	e	1
B	Tacos	e	1
B	Trout Almondine	e	1
B	Tuna Melt	e	1
B	Vegetarian Lasagna	e	1
B	Bananas	f	7
B	Canned Fruit	f	7
B	Fresh Fruit	f	6
B	Grapefruit Juice	f	7
B	Orange Juice	f	7
B	Salad Bar	s	14
B	Baked Potato Bar	st	1
B	Biscuits	st	1

VARIETY - NAVY MENU STUDY
BY WEEK (7 DAYS)

SITE	RINAME	FOOD_GRP	COUNT
B	Bread Stuffing	st	1
B	Buttered Noodles	st	1
B	Corn Bread Stuffing	st	1
B	Dry Cereal	st	7
B	Hashbrown Casserole	st	1
B	Hashbrowns	st	7
B	Hot Cereal	st	7
B	Mashed Potatoes	st	1
B	Mashed Potatoes w/gravy	st	1
B	Pancakes	st	4
B	Rice Pilaf	st	1
B	Sweet Potato Souffle	st	1
B	Tijuana Torte	st	1
B	Broccoli	v	1
B	Corn	v	2
B	Corn on the Cob	v	1
B	Mexi-Corn	v	1
B	Mixed Vegetables	v	4
B	Peas	v	1
B	Peas & Mushrooms	v	1
B	Refried Beans	v	1
B	Roosevelt Beans	v	1
B	Sauteed Yellow Squash	v	1
B	Sauteed Zucchini	v	1
B	Yellow Squash Parmesan	v	1

Number of cases read = 79 Number of cases listed = 79

VARIETY - NAVY MENU STUDY
BY WEEK (7 DAYS)

SITE	RINAME	FOOD_GRP	COUNT
C	Bean Soup	a	1
C	Beef Barley Soup	a	1
C	Chicken Gumbo	a	1
C	Cream of Tomato Soup	a	2
C	Hot Cheese & Chips	a	1
C	Tomato Juice	a	5
C	Turkey Noodle Soup	a	1
C	Turkey Rice Soup	a	2
C	Apple Pie	d	1
C	Apple Turnovers	d	1
C	Blonde Brownies	d	1
C	Carrot Cake	d	1
C	Cherry Cobbler	d	1
C	Cherry Gelatin Cubes w/Whipped Topping	d	1
C	Cherry Pie	d	1
C	Chocolate Brownies	d	1
C	Chocolate Cake w/Choc icing	d	1
C	Chocolate Cream Pie	d	1
C	Chocolate Cream Puff	d	1
C	Chocolate Pudding	d	1
C	Chocolate Pudding w/Whipped Topping	d	1
C	Cowboy Cookies	d	1
C	Cream Puffs	d	1
C	Donuts	d	3
C	Fruit Won Tons	d	1
C	Gelatin Cubes	d	1
C	Hermits	d	1
C	Ice Box Cookies	d	1
C	Ice Cream	d	5
C	Jelly Bar Spritz	d	1
C	Jelly Roll	d	1
C	Lemon Meringue Pie	d	2
C	Lime Gelatin Cubes	d	1
C	Oatmeal Cookies	d	1
C	Peach Turnovers	d	1
C	Pecan Pie	d	1
C	Pineapple Upside down cake	d	1
C	Pound Cake	d	1
C	Pumpkin Chiffon Pie	d	1
C	Pumpkin Pie	d	1
C	Sherbet	d	12
C	Strawberry Chiffon	d	1
C	Sugar Cookies	d	1
C	Tapioca Cream Pudding	d	1
C	Tapioca Pudding	d	1
C	Vanilla Pudding	d	1
C	White Cake w/Carmel Frosting	d	1
C	BBQ Chips	e	1
C	Bacon	e	1
C	Baked Breaded Cod	e	1
C	Baked Turkey & Noodles	e	1
C	Beef & Vegetables Stir Fry	e	1
C	Beef Patty on Bun	e	1
C	Boiled Eggs	e	1

VARIETY - NAVY MENU STUDY
BY WEEK (7 DAYS)

SITE	RINAME	FOOD_GRP	COUNT
C	Cheese & Mushroom Omelet	e	1
C	Cheese Pizza	e	1
C	Cheese Puffs	e	1
C	Chicken Sandwich	e	1
C	Clams	e	1
C	Corn Dogs	e	1
C	Country Fried Steak	e	1
C	Deli Bar	e	5
C	Deluxe Pizza	e	1
C	Denver Omelet	e	1
C	Denver Sandwich	e	1
C	Fishwich on Bun	e	1
C	French Toast	e	1
C	Fried Eggs	e	3
C	Grilled Pork Chops	e	1
C	Ham	e	1
C	Ham & Cheese Sandwich	e	1
C	Ham Salad on Whole Wheat	e	1
C	Ham Steak Hawaiian	e	1
C	Hamburgers	e	1
C	Hot Dogs	e	1
C	Hunan Chicken	e	1
C	Italian Hoagie	e	1
C	Lasagna	e	1
C	Liver and Onions	e	1
C	Macaroni & Cheese	e	2
C	Monte Cristo Sandwich	e	1
C	Mushroom Omelet	e	1
C	Pork Chop Oriental	e	1
C	Quesadilla	e	1
C	Ratatouille	e	1
C	Rib Eye 10 oz	e	1
C	Salisbury Steak	e	1
C	Sausage Cheese Biscuit	e	1
C	Sausage Links	e	1
C	Sausage, Gravy & Biscuits	e	1
C	Scrambled Eggs	e	6
C	Shrimp	e	1
C	Shrimp Fried Rice	e	1
C	Sirloin 7 oz	e	1
C	Steak	e	1
C	Sweet & Sour Pork	e	1
C	Tacos	e	1
C	Texas Grilled Cheese	e	1
C	Tuna Noodle Casserole	e	1
C	Tuna Salad (Sandwich)	e	1
C	Turkey Salad (Sandwich)	e	1
C	Veal Parmesan	e	1
C	Apple Half	f	1
C	Apple Juice	f	5
C	Applesauce	f	2
C	Banana Half	f	3
C	Fresh Fruit	f	6
C	Fresh Fruit Bar (Ban, Grp, Wtrm, Cant, Ap, Pr	f	1

VARIETY - NAVY MENU STUDY
BY WEEK (7 DAYS)

SITE	RINAME	FOOD_GRP	COUNT
C	Fruit Cocktail	f	1
C	Grape Juice	f	5
C	Grapefruit Half	f	1
C	Grapefruit, Fruit Cocktail	f	2
C	Grapefruit, Plums	f	1
C	Grapes	f	1
C	Orange Juice	f	5
C	Orange Quarters	f	2
C	Orange, Applesauce	f	1
C	Orange, Peach Slices	f	1
C	Orange, Pear Slices	f	1
C	Peach Slices	f	1
C	Peaches	f	1
C	Pear Slices	f	1
C	Pears	f	1
C	Pineapple Slices	f	1
C	Garden Pasta Salad	s	1
C	Tossed Green Salad	s	13
C	Baked Potato	st	1
C	Biscuits	st	2
C	Blueberry Pancakes	st	1
C	Buttermilk Pancakes	st	1
C	Cinnamon Coffee Cake	st	1
C	Cinnamon Raisin Bread	st	1
C	Coffee Cake	st	1
C	Cornbread Muffins	st	1
C	Crackers	st	9
C	Cream of Wheat	st	1
C	Dry Cereal	st	6
C	English Muffins	st	1
C	French Fried Potatoes	st	2
C	Hashed Brown Potatoes	st	5
C	Hearty Fried Potatoes	st	2
C	Home Fried Potatoes	st	1
C	Homemade Bread	st	1
C	Mashed Potatoes	st	1
C	Oatmeal	st	1
C	Oriental Rice and Vegetables	st	1
C	Pancakes	st	3
C	Potato Chips	st	4
C	Rice	st	2
C	Rolls	st	3
C	Steamed Rice	st	1
C	Sweet Potatoes	st	1
C	Texas Toast	st	1
C	Waffles	st	2
C	Wheat toast	st	7
C	White toast	st	6
C	Broccoli	v	2
C	Brussels Sprouts	v	1
C	Carrots	v	2
C	Cauliflower	v	2
C	Cauliflower w/Paprika	v	1
C	Chinese Vegetables	v	1

VARIETY - NAVY MENU STUDY
BY WEEK (7 DAYS)

SITE	RNAME	FOOD_GRP	COUNT
C	Corn	v	1
C	French cut Green Beans	v	1
C	Green Beans	v	1
C	Mexican Medley	v	1
C	Mixed Vegetables	v	4
C	Peas	v	1
C	Savory Green Beans	v	1
C	Vegetable Combo (Caul,broc,carrots)	v	1
C	Zucchini w/Tomatoes	v	1

Number of cases read = 171 Number of cases listed = 171

VARIETY - NAVY MENU STUDY
BY WEEK (7 DAYS)

SITE	RINAME	FOOD_GRP	COUNT
D	Apple Pie	d	2
D	Banana Pudding	d	1
D	Cheese Cake	d	1
D	Ice Cream	d	2
D	Beef Stew	e	2
D	Bologna	e	1
D	Cheese Omelets	e	1
D	Chicken Patties	e	1
D	Chili	e	1
D	Corn Beef Hash	e	1
D	Corned Beef	e	1
D	French Toast	e	3
D	Ham	e	1
D	Hamburgers	e	1
D	Hot Dogs	e	1
D	Macaroni Pie	e	1
D	Pizza	e	1
D	Ravioli	e	1
D	Sausage Links	e	2
D	Spaghetti w/ Meat Sauce	e	2
D	Steak and Onions	e	2
D	Stew Beef	e	1
D	Applesauce	f	1
D	Cantalope	f	1
D	Cinnamon Apple	f	1
D	Cinnamon Apples	f	1
D	Fruit	f	1
D	Juice	f	6
D	Orange	f	1
D	Peaches	f	2
D	Lettuce	s	1
D	Salad Plate	s	1
D	Tossed Salad	s	4
D	Biscuits	st	2
D	Bread	st	5
D	Buns	st	2
D	Cereal	st	3
D	Cinnamon Toast	st	1
D	Cornbread	st	1
D	Crackers	st	1
D	French Fries	st	1
D	Garlic Bread	st	2
D	Grits	st	4
D	Honey Buns	st	1
D	Pinto Beans	st	1
D	Potato Chips	st	1
D	Rice	st	2
D	Rolls	st	1
D	Tater Tots	st	1
D	Toast	st	3
D	Broccoli	v	2
D	Broccoli, Cauliflower & Carrots	v	1
D	Corn	v	5
D	Creamed Corn	v	1

VARIETY - NAVY MENU STUDY
BY WEEK (7 DAYS)

SITE RENAME		FOOD_GRP COUNT	
D	Cucumbers	v	1
D	Lima Beans	v	1
D	Mixed Vegetables	v	1
D	Spinach	v	1
D	Stewed Tomatoes	v	1

Number of cases read = 59 Number of cases listed = 59

VARIETY - NAVY MENU STUDY
BY WEEK (7 DAYS)

SITE	RINAME	FOOD_GRP	COUNT
L	Bean & Bacon Soup	a	1
L	Bean Soup	a	1
L	Beef Barley Soup	a	1
L	Beef Noodle Soup	a	1
L	Beef Rice Soup	a	1
L	Chicken Vegetable Soup	a	1
L	Cream of Potato Soup	a	1
L	Egg Drop Soup	a	1
L	Manhattan Clam Chowder	a	1
L	Mulligatawny Soup	a	1
L	Turkey Noodle Soup	a	2
L	Vegetable Soup	a	2
L	Apple Pie	d	4
L	Apple Turnover	d	2
L	Blueberry Pie	d	2
L	Bread Pudding	d	4
L	Cherry Crunch Pie	d	2
L	Chocolate Cake	d	2
L	Chocolate Chip Cake	d	2
L	Chocolate Chip Cookies	d	2
L	Chocolate Cream Pie	d	2
L	Congo Bars	d	2
L	Doughnuts	d	14
L	Ginger Cookies	d	2
L	Ice Cream	d	14
L	Jello	d	14
L	Mixed Fruit Pie	d	2
L	Molasses Cookies	d	2
L	Peanut Butter Cookies	d	2
L	Pineapple Upside Down Cake	d	2
L	Pudding	d	14
L	Rice Pudding	d	2
L	Spice Cake	d	2
L	White Cake	d	2
L	White Cupcake	d	2
L	BBQ Pork	e	1
L	BBQ Spareribs	e	1
L	Baked Fillet of Flounder	e	1
L	Baked Lasagna	e	2
L	Baked Macaroni & Cheese	e	1
L	Baked Stuffed Pork Chops	e	1
L	Baked Tuna Casserole	e	1
L	Barbecued Beef	e	1
L	Barbecued Beef on a Bun	e	2
L	Beef Patties	e	2
L	Beef Roulades w/Gravy	e	1
L	Boiled Eggs	e	7
L	Braised Spareribs	e	1
L	Cheeseburger Deluxe	e	14
L	Chicken Cacciatore	e	2
L	Chicken Fried Beef	e	1
L	Chicken in a Basket	e	12
L	Chili	e	14
L	Chili Dog	e	14

VARIETY - NAVY MENU STUDY
BY WEEK (7 DAYS)

SITE	RINAME	FOOD_GRP	COUNT
L	Corn Dogs	e	2
L	Creole Macaroni	e	7
L	Creole Spaghetti	e	7
L	Double Cheeseburger	e	14
L	Double Hamburger	e	14
L	Egg McMuffin	e	7
L	Egg Salad Sandwich	e	2
L	Eggs to Order	e	7
L	Fish & Chips	e	6
L	Fishwich Sandwich	e	1
L	Frankfurters	e	14
L	French Toast	e	7
L	Fried Chicken	e	12
L	Fried Fish Portions	e	2
L	Fried Shrimp	e	1
L	Glazed Cornish Hens	e	1
L	Ham & Cheese Sandwich	e	6
L	Ham Slices	e	7
L	Hamburger Deluxe	e	14
L	Hot Roast Beef Sandwich	e	1
L	Hot Roast Pork Sandwich	e	1
L	Italian Hoagie	e	2
L	Knockwurst w/Sauerkraut	e	1
L	Kraut Dog	e	14
L	Liver & Onions	e	3
L	Meatball Hoagie	e	2
L	Omelets	e	7
L	Pepper Steak	e	1
L	Pizza	e	12
L	Pork Chops	e	2
L	Pot Roast	e	1
L	Roast Beef w/Gravy	e	1
L	Roast Pork Loin	e	1
L	Salisbury Steak	e	1
L	Sausage Biscuit	e	6
L	Sausage Patties	e	7
L	Simmered Corned Beef	e	1
L	Sliced Bacon	e	7
L	Steak Sandwich	e	12
L	Tacos	e	1
L	Tomato Meatloaf	e	1
L	Tuna Salad Sandwich	e	2
L	Turkey a la King	e	1
L	Veal Cutlets	e	1
L	Vegetable Meat Loaf	e	1
L	Applesauce	f	1
L	Assorted Fresh Fruits	f	21
L	Assorted Juices	f	21
L	Mixed Fruit	f	2
L	Apple and Raisin Salad	s	2
L	Beet and Onion Salad	s	2
L	Carrot and Pineapple Salad	s	2
L	Cole Slaw	s	2
L	Cottage Cheese and Pineapple Salad	s	2

VARIETY - NAVY MENU STUDY
BY WEEK (7 DAYS)

SITE	RINAME	FOOD_GRP	COUNT
L	Cottage Cheese and Tomato Salad	s	2
L	Macaroni Salad	s	4
L	Mexican Cole Slaw	s	2
L	Pickled Beet and Onion Salad	s	2
L	Pineapple Cole Slaw	s	2
L	Potato Salad	s	2
L	Tossed Salad	s	14
L	Assorted Breads	st	21
L	Biscuit	st	7
L	Bread Dressing	st	1
L	Coffee Cake	st	14
L	Crackers	st	21
L	Dinner Rolls	st	21
L	Dry Cereals	st	7
L	Duchess Potatoes	st	2
L	Egg Noodles	st	1
L	French Fries	st	14
L	Fried Rice	st	1
L	Green Rice	st	1
L	Home Fried Potatoes	st	8
L	Hot Cereal	st	7
L	Mashed Potatoes	st	4
L	Navy Beans	st	1
L	O'Brien Potatoes	st	1
L	Oven Browned Potatoes	st	1
L	Pancakes	st	7
L	Parsley Buttered Potatoes	st	1
L	Pinto Beans	st	1
L	Pinto Beans w/Hocks	st	1
L	Rice	st	5
L	Sweet Dough	st	14
L	Tossed Green Rice	st	1
L	Waffles	st	7
L	Whipped Potatoes	st	1
L	Asparagus	v	1
L	Beets in Orange/Lemon Sauce	v	1
L	Broccoli	v	1
L	Brussels Sprouts	v	1
L	Cabbage	v	2
L	Carrots	v	2
L	Collard Greens w/Onions	v	1
L	Corn	v	2
L	Corn on the Cob	v	1
L	Fried Okra	v	1
L	Fried Onion Rings	v	2
L	Green Beans	v	1
L	Green Peas	v	2
L	Green Peas and Mushrooms	v	1
L	Hot Spiced Beets	v	1
L	Mixed Vegetables	v	1
L	Raw Bar	v	14
L	Seasoned Spinach	v	1
L	Stewed Tomatoes	v	1
L	Succotash	v	1

VARIETY - NAVY MENU STUDY
BY WEEK (7 DAYS)

SITE RENAME		FOOD_GRP COUNT	
L	Three Bean Salad	v	2
L	Wax Beans	v	1

Number of cases read = 164 Number of cases listed = 164

VARIETY - NAVY MENU STUDY
BY WEEK (7 DAYS)

SITE	RINAME	FOOD_GRP	COUNT
M	Bean Soup	a	1
M	Beef Barley Soup	a	1
M	Beef Noodle Soup	a	2
M	Beef Vegetable Soup	a	1
M	Cream of Asparagus Soup	a	1
M	Cream of Chicken Soup	a	1
M	Cream of Mushroom Soup	a	1
M	Cream of Potato Soup	a	1
M	Egg Drop Soup	a	1
M	Minestrone Soup	a	1
M	New England Clam Chowder	a	1
M	Tomato Juice	a	1
M	Tomato Rice Soup	a	1
M	Turkey Noodle Soup	a	1
M	Banana Cream Pie	d	2
M	Banana Pudding	d	1
M	Chocolate Brownies w/Frosting	d	1
M	Chocolate Chip Cookies	d	2
M	Ice Cream Sundaes	d	1
M	Lemon Chiffon Pie	d	1
M	Marble Cake w/Chocolate Frosting	d	1
M	Marble Cake w/Frosting	d	1
M	Orange Cake w/Frosting	d	1
M	Pastries	d	7
M	Pecan Pie	d	1
M	Strawberry Chiffon Pie	d	1
M	Vanilla Pudding	d	1
M	White Cake w/Frosting	d	2
M	BBQ Beef Sandwich	e	1
M	Bacon and Egg Sandwich	e	1
M	Baked Fish Fillet	e	1
M	Buttered Farina	e	2
M	Buttered Grits	e	2
M	Cantonese Style Spareribs	e	1
M	Chicken Chow Mein	e	1
M	Chicken Fried Steak	e	1
M	Chili	e	1
M	Chili Dog	e	2
M	Chili con Carne w/Beans	e	1
M	Chinese Fried Rice	e	1
M	Creamed Beef on Biscuits	e	1
M	Creamed Dried Beef on Toast	e	1
M	Eggs to Order	e	8
M	Fishwich	e	1
M	Fried Chicken	e	1
M	Grilled Bacon Slices	e	1
M	Grilled Bologna Wheels	e	1
M	Grilled Breakfast Steak	e	1
M	Grilled Ham & Cheese Sandwich	e	1
M	Grilled Ham Slices	e	1
M	Grilled Ham Steaks	e	1
M	Grilled Luncheon Meat	e	2
M	Grilled Roast Beef Sandwich	e	1
M	Grilled Sausage Patties	e	1

VARIETY - NAVY MENU STUDY
BY WEEK (7 DAYS)

SITE	RINAME	FOOD_GRP	COUNT
M	Ham and Egg Sandwich	e	1
M	Minced Beef on Toast	e	1
M	Omelets	e	7
M	Open Face Turkey Sandwich	e	1
M	Oriental Pepper Steak	e	1
M	Oven Roast Beef	e	2
M	Reuben Sandwich	e	1
M	Roast Pork Loin	e	1
M	Roast Turkey Sandwich	e	1
M	Sausage and Egg Sandwich	e	1
M	Simmered Franks	e	2
M	Spanish Steak	e	1
M	Spicey Pork Adobo	e	1
M	Stuffed Cabbage Rolls	e	1
M	Apple Juice	f	2
M	Applesauce	f	1
M	Fresh Fruit	f	7
M	Grape Juice	f	2
M	Grapefruit Juice	f	2
M	Orange Juice	f	3
M	Salad Bar	s	14
M	Assorted Breads	st	16
M	Baked Potatoes	st	1
M	Biscuits	st	2
M	Biscuits with Sausage Gravy	st	1
M	Blueberry Pancakes	st	3
M	Candied Sweet Potatoes	st	1
M	Cinnamon French Toast	st	1
M	Dry Cereals	st	7
M	French Fried Potatoes	st	1
M	Fried Rice	st	1
M	Golden French Fries	st	2
M	Hashed Brown Potatoes	st	7
M	Mashed Potatoes	st	1
M	Oven Brownd Potatoes	st	1
M	Oven Glow Potatoes	st	1
M	Parsley Potatoes	st	1
M	Potato Chips	st	1
M	Scalloped Potatoes	st	1
M	Spanish Rice	st	1
M	Steamed Rice	st	1
M	Strawberry Pancakes	st	1
M	Waffles	st	2
M	Waldorf Potatoes	st	1
M	Whole Wheat Meal	st	1
M	Asparagus Spears	v	1
M	BBQ Beans	v	1
M	Chinese Fried Cabbage	v	1
M	Corn	v	1
M	Corn on the Cob	v	1
M	Fried Cabbage	v	1
M	Glazed Carrots	v	3
M	Golden Onion Rings	v	2
M	Mexican Corn	v	1

VARIETY - NAVY MENU STUDY
BY WEEK (7 DAYS)

SITE	RNAME	FOOD_GRP	COUNT
M	Mixed Vegetables	v	2
M	Seasoned Broccoli	v	1
M	Seasoned Brussels Sprouts	v	2
M	Seasoned Mexican Corn	v	1
M	Seasoned Peas and Carrots	v	1
M	Seasoned Summer Squash	v	1
M	Seasoned Wax Beans	v	1
M	Southern Style Collard Greens	v	1
M	Succotash	v	1
M	Vegetable Combo	v	1
M	Vegetable Stir Fry	v	1

Number of cases read = 119 Number of cases listed = 119

VARIETY - NAVY MENU STUDY
BY WEEK (7 DAYS)

SITE	RINAME	FOOD_GRP	COUNT
N	Bean & Bacon Soup	a	1
N	Bean Soup	a	1
N	Beef Barley Soup	a	1
N	Beef Noodle Soup	a	1
N	Chicken Rice Soup	a	1
N	Corn Chowder	a	2
N	Cream of Mushroom Soup	a	1
N	Egg Drop Soup	a	2
N	New England Clam Chowder	a	1
N	Split Pea Soup	a	1
N	Tomato Juice	a	3
N	Tomato Vegetable Soup	a	1
N	Vegetable Supreme Soup	a	1
N	Applesauce Cake	d	4
N	Boston Cream Pie	d	2
N	Brown Sugar Cookies	d	2
N	Chocolate Cake	d	4
N	Chocolate Chip Cookies	d	2
N	Devil's Food Cake	d	2
N	Donuts	d	7
N	French Apple Pie	d	4
N	Fudge Surprise Cake	d	2
N	Gelatin	d	14
N	Hawaiian Spice Cake	d	2
N	Lemon Meringue Pie	d	4
N	Oatmeal Cookies	d	4
N	Peanut Butter Cookies	d	4
N	Pumpkin Pie	d	2
N	Strawberry Shortcake	d	2
N	Sugar Cookies	d	2
N	American Chop Suey	e	1
N	BBQ Beef Tips	e	1
N	BBQ Beef on a Bun	e	1
N	Bacon	e	5
N	Bacon Cheeseburger	e	1
N	Baked Meat Loaf	e	1
N	Beans & Weenies	e	1
N	Beef Patties	e	1
N	Beef Roulades	e	1
N	Beef Stroganoff	e	1
N	Breaded Pork Chops	e	1
N	Cannonball Sandwich	e	1
N	Cheeseburgers	e	10
N	Chili Dog	e	10
N	Chili Macaroni	e	6
N	Corned Beef Hash	e	1
N	Creamed Beef on Toast	e	1
N	Creole Spaghetti	e	7
N	Dieter's Plate (Chef's Salad)	e	1
N	Dieter's Plate (Chicken)	e	1
N	Dieter's Plate (Roast Beef)	e	1
N	Dieter's Plate (Tuna)	e	1
N	Dieter's Plate (Turkey/Cheese)	e	1
N	Egg and Cheese McMuffins	e	7

VARIETY - NAVY MENU STUDY
BY WEEK (7 DAYS)

SITE	RINAME	FOOD_GRP	COUNT
N	Eggs to Order	e	4
N	Fish Portion	e	1
N	French Toast	e	4
N	Fried Chicken	e	11
N	Fried Eggs	e	5
N	Fried Fish Fillet	e	1
N	Fried Perch Fillet	e	1
N	Grilled Cheese Sandwich	e	7
N	Grilled Ham & Cheese Sandwich	e	5
N	Ham	e	6
N	Ham and Cheese McMuffins	e	7
N	Hamburgers	e	10
N	Hot Dogs w/Sauerkraut	e	10
N	Macaroni & Cheese	e	1
N	Minced Beef on Toast	e	1
N	Omelets	e	8
N	Oriental Steak	e	1
N	Pizza	e	10
N	Reuben Sandwich	e	1
N	Roast Beef	e	1
N	Sausage	e	5
N	Sausage Patties	e	1
N	Sausage and Cheese McMuffins	e	7
N	Spaghetti w/Meat Sauce	e	1
N	Stuffed Meat Loaf	e	1
N	Submarine Sandwich	e	1
N	Supreme Pizza	e	1
N	Taco Bar	e	5
N	Teriyaki Steak	e	1
N	Yankee Pot Roast	e	2
N	Apple Juice	f	1
N	Fresh Fruit	f	7
N	Grape-Orange Drink	f	2
N	Pineapple Juice	f	1
N	Salad Bar	s	14
N	Apple Coffee Cake	st	3
N	Apricot Coffee Cake	st	1
N	Baked Potato Bar	st	10
N	Blueberry Coffee Cake	st	2
N	Blueberry Pancakes	st	3
N	Breads	st	7
N	Butterfly Rolls	st	2
N	Buttermilk Pancakes	st	1
N	Cinnamon French Toast	st	1
N	Dinner Rolls	st	10
N	Dry Cereals	st	7
N	Egg Noodles	st	1
N	Farina	st	1
N	French Coffee Cake	st	1
N	French Fried Potatoes	st	7
N	French Toast Puffs	st	1
N	Fried Rice	st	1
N	Golden Fried Potatoes	st	1
N	Green Rice	st	1

VARIETY - NAVY MENU STUDY
BY WEEK (7 DAYS)

SITE	RINAME	FOOD_GRP	COUNT
N	Hashed Brown Potatoes	st	6
N	Home Fried Potatoes	st	1
N	Hominy Grits	st	5
N	Hot Cross Buns	st	2
N	Lyonnaise Potatoes	st	1
N	Mashed Potatoes	st	2
N	O'Brien Potatoes	st	1
N	Oatmeal	st	1
N	Parsley Buttered Potatoes	st	1
N	Pineapple Pancakes	st	1
N	Potato Chips	st	1
N	Rice	st	9
N	Rolls	st	3
N	Snowflake Potatoes	st	1
N	Strawberry Fritters	st	1
N	Sweet Rolls	st	2
N	Waffles	st	8
N	Whipped Potatoes	st	2
N	Baked Beans	v	2
N	Broccoli	v	1
N	Cabbage Wedges	v	1
N	Carrot Sticks	v	3
N	Corn	v	1
N	Corn on the Cob	v	1
N	French Fried Tomatoes	v	1
N	Fried Cabbage	v	1
N	Fried Cauliflower	v	1
N	Fried Okra	v	2
N	Green Beans	v	2
N	Green Beans Nicoise	v	1
N	Mixed Vegetables	v	2
N	Mustard Greens	v	1
N	Onion Rings	v	6
N	Peas	v	1
N	Sauteed Mushrooms & Onions	v	1
N	Spinach	v	1
N	Succotash	v	3
N	Turnips & Bacon	v	1
N	Wax Beans	v	1

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